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23M1/0610

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**NOTICE OF ALLOWANCE
AND ISSUE FEE DUE**

Note attached communication from the Examiner
 This notice is issued in view of applicant's communication filed _____

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/162,420	12/03/93	012	RAMIREZ, E.	2314 06/10/94
First Named Applicant	TOMPKINS,		MICHAEL E.	

TITLE OF
INVENTION: A MICROCOMPUTER SPA CONTROL SYSTEM (AS AMENDED)

	ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEES DUE	DATE DUE
2	86119806	364-505.000	B54	UTILITY	YES	\$585.00	09/12/94

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS
APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY Status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the Status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status; or
B. If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or
B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by a charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.

III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees.

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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/162,420	12/03/93	TOMPKINS	M 86199804

23M1/0610

RAMIREZ, E EXAMINER

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ART UNIT	PAPER NUMBER
2314	9

010/10/94

DATE MAILED:

NOTICE OF ALLOWABILITY

PART I.

1. This communication is responsive to DECLARATION FILED on 5/23/94.

2. All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.

3. The allowed claims are 1-12.

4. The drawings filed on _____ are acceptable.

5. Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [] been received. [] not been received. [] been filed in parent application Serial No. _____, filed on _____.

6. Note the attached Examiner's Amendment.

7. Note the attached Examiner Interview Summary Record, PTOL-413.

8. Note the attached Examiner's Statement of Reasons for Allowance.

9. Note the attached NOTICE OF REFERENCES CITED, PTO-892.

10. Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

2. APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.

- Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. 9. CORRECTION IS REQUIRED.
- The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
- Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
- Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL- 413
- Reasons for Allowance
- Notice of References Cited, PTO-892
- Information Disclosure Citation, PTO-1449
- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

ELLIS B. RAMIREZ
PATENT EXAMINER
GROUP 2500

The following is an Examiner's Statement of Reasons for Allowance: The claimed invention is directed to a spa control system which uses a microcomputer for maintaining the spa at a desired operating condition. Different aspects of the invention have been claimed. For example, in claims 1 and 8 the temperature of the water and at the heater is measured and the microcomputer is used to selectively used to activate the heater, and for determining a malfunction component. This capability allows the user of the spa to enjoy the system without having to worry about the temperature at the spa or at the heater.

Additionally, it should be noted, concerning claim 8, that when the claim recites the "circulating of the water" it is understood that the microcomputer controller "monitors the rate decrease and rate increase of the water temperature so that the final temperature of the water is not lower than the selected temperature." (page 6 of the disclosure) The Examiner has relied on the Ramsauer et al, patent 4385724, Castleberry et al, patent 4564962, Whitaker et al, patent 4381031, Hatcher, patent 4404697, Hancock, patent 4780917, Eastep, patent 4410791, and Krumhansl, patent 4621613, to show the state and skill of the prior art. The prior art, in these references, is electro-mechanical. These references do not disclose the use of a microcomputer controller. It should be noted that when Whitaker et al discloses the sensing of "the spa water temperature",

column 4, it is merely taking the recirculated water and if the temperature reaches an " off set point" the thermostat triggers the adding of more water. Further, a thorough reading of the Whitaker etal patent reveals that the disclosure does not suggest the monitoring of the temperature a selected location. Whitaker etal is further limited in that the reference either measures the temperature, in both cases indirectly, of the spa or the heater it cannot do both as the claimed invention. The examiner would like to note the patent of Pryor, 4398789, which teaches the use of a microcomputer in " whirlpools, bidets, showers and other usable water systems." Column 1. Pryor discloses that the : " microcomputer control in the swimming pool area would afford such features as automatic control of temperature, discharge pressure, rate of flow, back pressure, in-line chlorine concentration, PH, etc., as well as varying temperature, heating, and flow with time of day and usage so as to minimize heat energy usage so as to minimize heat energy wastage and the like." Column 1, lines 49-56. The patent to pryor does not disclose the use of two sensors to measure the temperature of the water in the spa or at the heater. It is noted that Pryor measures the temperature of the water being discharged from the heater. See column 3, lines 44-46. The disclosure of the claimed invention in figure 1, and the accompanying text, shows that the it is the temperature of the heating element which is being monitored.

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Art Unit: 2314

Still further, Pryor does not disclose the use of a PID controller, the determination of the time taken to affect a desired change on the temperature of the water in the spa, or a control of the spa so as to prevent the water from freezing. These and other aspects of the claimed invention are not taught by the Pryor patent.

The affidavits submitted provide an indication that those in the art would be able to make and use the invention. Therefore, the rejection under 35 USC 112, 1st paragraph, is vacated.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


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